

Amendments to the Claims

1. (Currently amended) A method for providing multicast services in a radio communication system, the method comprising:
performing Internet protocol header compression to form header compressed data; and
transmitting the header compressed data in at least one of a point-to-point manner and in a point-to-multipoint manner depending upon a threshold value, to one or more users of the radio communication system;
wherein the point-to-point manner is performed in a serving radio network controller (SRNC) and the point-to-multipoint manner is performed in a controlling radio network controller (CRNC).
2. (Original) The method of claim 1, wherein the point-to-point manner is employed if a total number of users within a cell is below the threshold value.
3. (Original) The method of claim 1, wherein the point-to-multipoint manner is employed if a total number of users within a cell is at or above the threshold value.
4. (Original) The method of claim 1, wherein the Internet protocol header compression is respectively performed for each type of multicasting service to be provided.
5. (Original) The method of claim 1, wherein the point-to-point manner is transmitting data from a single sending point to a single receiving point.
6. (Original) The method of claim 5, wherein the point-to-point manner is based upon a total number of users within a cell of the radio communication system.
7. (Canceled)
8. (Currently amended) The method of claim 76, wherein the transmitting by point-to-point manner is via a dedicated channel.
9. (Original) The method of claim 1, wherein the point-to-multipoint manner is transmitting data from a single sending point to multiple receiving points.

10. (Original) The method of claim 9, wherein the point-to-multipoint manner is based upon a total number of users within a cell of the radio communication system.

11. (Canceled)

12. (Currently amended) The method of claim 1110, wherein the transmitting by point-to-multipoint manner is via a common channel.

13. (Original) The method of claim 1, wherein the header compression is performed at a central location for each type of multicast service.

14. (Currently amended) The method of claim 13, wherein the central location is a packet data convergence protocol (PDCP) entity, wherein one PDCP entity exists and is employed for multiple users.

15. (Original) The method of claim 14, wherein the PDCP entity is located within a controlling radio network controller (CRNC).

16. (Original) The method of claim 1, wherein a multicast service is a service that is provided to a specified plurality of users.

17. (Original) The method of claim 16, wherein the multicast service is multimedia broadcast / multicast service (MBMS).

18. (Currently amended) A method of receiving data of a multicast service in a radio communication system, the method comprising:

receiving header compressed data in at least one of a point-to-point manner and in a point-to-multipoint manner depending upon a threshold value; and

decompressing the received header compressed data to allow a user to access the multicast service,

wherein the point-to-point manner is performed in a serving radio network controller (SRNC) and the point-to-multipoint manner is performed in a controlling radio network controller (CRNC).

19. (Original) The method of claim 18, wherein the point-to-point manner is receiving data by a single receiving point from a single sending point.

20. (Original) The method of claim 19, wherein the point-to-point manner is based upon a total number of users within a cell of the radio communication system.

21. (Original) The method of claim 19, wherein the receiving by point-to-point manner is via a dedicated channel.

22. (Original) The method of claim 18, wherein the point-to-multipoint manner is receiving data by multiple receiving points from a single sending point.

23. (Original) The method of claim 22, wherein the point-to-multipoint manner is based upon a total number of users within a cell of the radio communication system.

24. (Original) The method of claim 22, wherein the receiving by point-to-multipoint manner is via a common channel.

25. (Original) The method of claim 18, wherein a multicast service is a service that is received by a specified plurality of users.

26. (Original) The method of claim 25, wherein the multicast service is multimedia broadcast / multicast service (MBMS).

27. (Currently amended) The method of claim 18, wherein the header decompressing is performed at a packet data convergence protocol (PDCP) entity, wherein one PDCP entity exists and is employed for multiple users.

28. (Currently amended) In a radio communication system for providing and receiving data of a multicast service, a radio network controller comprising:

a header compressing portion that performs Internet protocol header compression; and
a transmitting portion, operatively connected with the header compressing portion, that transmits the header compressed data in at least one of a point-to-point manner and in a point-

to-multipoint manner depending upon a threshold value, to one or more users of the radio communication system; ₁

wherein the point-to-point manner is performed in a serving radio network controller (SRNC) and the point-to-multipoint manner is performed in a controlling radio network controller (CRNC).

29. (Original) The radio network controller of claim 28, wherein the header compressing portion is a packet data convergence protocol (PDCP) entity.

30. (Original) The radio network controller of claim 28, wherein the header compressing portion respectively performs header compression for each type of multicasting service to be provided.

31. (Original) The radio network controller of claim 29, wherein the transmitting portion is a serving radio network controller (SRNC).

32. (Original) The radio network controller of claim 31, wherein the SRNC transmits via a dedicated transport channel.

33. (Original) The radio network controller of claim 29, wherein the transmitting portion is a controlling radio network controller (CRNC).

34. (Original) The radio network controller of claim 33, wherein the CRNC transmits via a common transport channel.

35. (Currently amended) In a radio communication system for providing and receiving data of a multicast service, a user equipment comprising:

a receiving portion, that receives in at least one of a point-to-point manner and in a point-to-multipoint manner, Internet protocol header compressed data; and

a header decompressing portion operatively connected with the receiving portion, the header decompressing portion decompressing the header compressed data to access the multicast service. ₁

wherein the receiving portion receives data in the point-to-point manner from a serving radio network controller (SRNC) and in the point-to-multipoint manner from a controlling radio network controller (CRNC).

36. (Original) The user equipment of claim 35, wherein the header decompressing portion is a packet data convergence protocol (PDCP) entity.

37. (Original) The user equipment of claim 35, wherein the header compressing portion respectively performs Internet protocol header compression for each type of multicasting service to be provided.

38. (Canceled)

39. (Original) The user equipment of claim 38, wherein the receiving portion receives via a dedicated transport channel.

40. (Canceled)

41. (Original) The user equipment of claim 40, wherein the receiving portion receives via a common transport channel.

42. (Currently amended) A method for providing multicast services in a radio communication system, the method comprising:

performing Internet protocol header compression to form header compressed data; and transmitting the header compressed data in at least one of a point-to-point manner and a point-to-multipoint manner according to a type of multicast service to one or more users in the radio communication system.

wherein the point-to-point manner is performed in a serving radio network controller (SRNC) and the point-to-multipoint manner is performed in a controlling radio network controller (CRNC).

43. (Currently amended) A method of providing a point-to-multipoint service to a plurality of terminals in a wireless communication system, the method comprising:

performing compression of at least part of at least one header to form a compressed header of the point-to-multipoint service in one header compression module of a plurality of header compression modules in a network communicating with the plurality of terminals; and

transmitting the compressed header of the point-to-multipoint service to at least one terminal of the wireless communication system, wherein the number of the plurality of terminals is greater than the number of header compression modules in the network.

44. (Previously presented) The method of claim 43, wherein the header is an Internet protocol header.

45. (Currently amended) The method of claim 43, wherein the compressed header of the point-to-multipoint service is transmitted to the plurality of terminals using a common channel.

46. (Previously presented) The method of claim 43, wherein the data comprising the compressed header is transmitted to the plurality of terminals in at least one of a point-to-point and a point-to-multipoint manner,

wherein the point-to-point manner is performed in a serving radio network controller (SRNC) and the point-to-multipoint manner is performed in a controlling radio network controller (CRNC).

47. (Previously presented) The method of claim 46, wherein the selection of one of the point-to-point manner and the point-to-multipoint manner is determined using a predetermined requirement associated with a number of terminals communicating with the network.

48. (Currently amended) The method of claim 43, wherein at least part of the compressed header of the point-to-multipoint service is not compressed by the header compression module.

49. (Previously presented) The method of claim 43, wherein the header compression module is associated with a packet data convergence protocol layer of the network.

50. (Previously presented) The method of claim 43, wherein the header compression module is associated with a controlling radio network controller.

51. (Currently amended) A method of providing Internet protocol header information to a plurality of terminals in a wireless communication system, the method comprising:

performing header compression of Internet protocol header information to form compressed header data; and

transmitting the compressed header data to at least one terminal of the communication system in at least one of a point-to-point manner and a point-to-multipoint manner depending upon a threshold value.

wherein the point-to-point manner is performed in a serving radio network controller (SRNC) and the point-to-multipoint manner is performed in a controlling radio network controller (CRNC).

52. (Previously presented) The method of claim 51, wherein header compression is performed once for the data transmitted to a plurality of terminals when the data is transmitted in a point-to-multipoint manner.

53. (Previously presented) The method of claim 51, wherein the compressed header data is provided to a plurality of terminals when the data is transmitted in a point-to-multipoint manner.

54. (Previously presented) The method of claim 51, wherein the threshold value is associated with a number of terminals.

55. (Previously presented) The method of claim 51, wherein the compressed header data is transmitted to the at least one terminal using a common channel.

56. (Previously presented) The method of claim 51, wherein at least part of the Internet protocol header information is not compressed.

57. (Previously presented) The method of claim 51, wherein the header compression is performed at a packet data convergence protocol layer.

58. (Previously presented) The method of claim 51, wherein the header compression is performed at a controlling radio network controller.

59. (Currently amended) A method of providing internet protocol header information to a plurality of terminals in a wireless communication system, the method comprising:

performing compression of internet protocol header information to form compressed header data and providing the compressed header data on a common logical channel;

transmitting the compressed header data to a plurality of terminals in at least one of a point-to-point manner and a point-to-multipoint manner wherein the compressed header data is mapped to a common physical channel accessible by a plurality of terminals; and

receiving and decompressing the compressed header data on the common physical channel at the plurality of terminals;

wherein the point-to-point manner is performed in a serving radio network controller (SRNC) and the point-to-multipoint manner is performed in a controlling radio network controller (CRNC).

60. (Previously presented) The method of claim 59, wherein at least part of the internet protocol header information is not compressed.

61. (Previously presented) The method of claim 59, wherein the compression of the internet protocol header information is performed at a packet data convergence protocol layer.

62. (Previously presented) The method of claim 59, wherein the compression of the internet protocol header information is performed at a controlling radio network controller.

63. (Previously presented) The method of claim 59, wherein the compressed header data is transmitted to the plurality of terminals in the point-to-multipoint manner over a wireless path.

64. (Previously presented) The method of claim 59, wherein the compression of the internet protocol header information and mapping of the compressed header data to the common physical channel is over a wired path.

65. (Currently amended) A method of providing internet protocol header information in a wireless communication system, the method comprising:

providing internet protocol header information from an internet protocol module to a header compression module associated with one of serving network control equipment and controlling network control equipment;

performing compression of the internet protocol header information in the header compression module to form compressed header data; and

transmitting the compressed header data to at least one terminal of the communication system in at least one of a point-to-point manner and a point-to-multipoint manner depending upon a threshold value and wherein the compressed header data is provided to a plurality of terminals when the data is transmitted in a point-to-multipoint manner;

wherein the point-to-point manner is performed in a serving radio network controller (SRNC) and the point-to-multipoint manner is performed in a controlling radio network controller (CRNC).

66. (Previously presented) The method of claim 65, wherein the compressed header data is transmitted in the point-to-point manner if the number of users is below the threshold value.

67. (Previously presented) The method of claim 65, wherein the compressed header data is transmitted in the point-to-multipoint manner if the number of users is at or above the threshold value.

68. (Previously presented) The method of claim 65, wherein the compression of the internet protocol header information is performed at a packet data convergence protocol layer.

69. (Previously presented) The method of claim 65, wherein the transmission of the compressed header data to the at least one terminal comprises a multicast service.

70. (Previously presented) The method of claim 69, wherein the multicast service is multimedia broadcast multicast service.

71. (Currently amended) A wireless communication system for providing internet protocol header information to a plurality of terminals, the wireless communication system comprising:

a header compression module adapted to receive internet protocol header information from an internet protocol module and compress the internet protocol header information to form compressed header data;

a transmitting module adapted to transmit the compressed header data to at least one user of the communication system in at least one of a point-to-point manner and a point-to-multipoint manner depending upon a threshold value; and

a receiving module adapted to receive and decompress the compressed header data, wherein the point-to-point manner is performed in a serving radio network controller (SRNC) and the point-to-multipoint manner is performed in a controlling radio network controller (CRNC).

72. (Previously presented) The wireless communication system of claim 71, wherein the compressed header data is provided to the plurality of terminals when the data is transmitted in a point-to-multipoint manner.

73. (Previously presented) The wireless communication system of claim 71, wherein the header compression module is associated with one of serving network control equipment and controlling network control equipment.

74. (Previously presented) The wireless communication system of claim 71, wherein the compressed header data is transmitted in the point-to-point manner if the number of terminals is below the threshold value.

75. (Previously presented) The wireless communication system of claim 71, wherein the compressed header data is transmitted in the point-to-multipoint manner if the number of terminals is at or above the threshold value.

76. (Previously presented) The wireless communication system of claim 71, wherein the header compression module is a packet data convergence protocol entity.

77. (Previously presented) The wireless communication system of claim 71, wherein the header compression module is part of a controlling radio network controller.

78. (Previously presented) The method of claim 43, wherein the point-to-multipoint service is an MBMS service.